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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,623	07/15/2003	Yasutaka Ito	238750US-90CONT	5651

22850 7590 12/08/2004

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1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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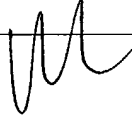
PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/618,623	Applicant(s) ITO ET AL. 	
	Examiner Sang Y Paik	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/28/04, 3/12/04, 3/29/04, 8/10/04, 9/12/04</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 23, there is no proper antecedent basis for "the connecting portion", and it is unclear whose strand wire is referred to by "its" pronoun.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikoshi et al (US 5,306,895) in view of Nobori et al (US 5,616,024), Bogdanski et al (US 6,150,636) or Abrami et al (US 5,001,423)

Ushikoshi et al show a ceramic heater with a sintered disk-shaped nitride ceramic plate with a heating element made of tungsten formed inside the ceramic plate, and the ceramic plate having a bottomed hole to receive a temperature-measuring element such as a sheathed thermocouple. Ushikoshi et al further show that the bottom of the bottomed hole is formed relatively nearer to the heating surface than the heating element. However, Ushikoshi et al do not

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show the claimed plurality of symmetrically provided holes around the center of the ceramic plate and the heating element in at least two circuits.

Nobori et al show a ceramic heater with a sintered disk-shaped nitride ceramic plate with a heating element formed inside the ceramic plate with a plurality of holes that can be provided to accommodate temperature measuring elements (see Figure 22b, and column 24, line 64 to column 25, line 3. Nobori et al further show that the heating element is divided into at least two circuits. In view of Nobori et al, it would have been obvious to one of ordinary skill in the art to adapt Ushikoshi et al with a plurality of bottomed holes to provide a plurality of temperature sensors to more accurately measure the heating temperature of the heating surface.

Bogdanski et al shows a ceramic heater with a plurality of heating elements with a plurality of temperature sensors provided in a symmetrical arrangement around the center of the ceramic plate and with another sensor at the center. Abrami et al also show a hot plate with a plurality of temperature sensors provided in a symmetrical arrangement around the center of the hot plate and with another sensor at the center. In view of Bogdanski et al or Abrami et al, it would have been obvious to further adapt Ushikoshi et al, as modified by Nobori, with the temperature sensors in a symmetrical arrangement so that the sensors are uniformly and evenly distributed along the heating surface to more accurately measure the heating temperature.

With respect to claim 24, it is noted to the applicant that this is a product by process claim wherein the patentability is determined by the product itself and not the process (see MPEP 2113).

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5. Claims 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al as applied to claims 17, 22 and 24-26 above, and further in view of Kersten et al (US 5,919,385) or Hecht et al (US 5,877,475).

Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al show the structure claimed except the temperature sensor pressed on the bottom portion of the hole.

Kersten et al shows a temperature sensor being pressed by a spring elastic means to press the heating temperature sensor against the heating surface. Hecht et al also shows a temperature sensor being pressed against the heating surface by an elastic body such as a spring member.

Hecht et al further shows the temperature sensor is a thermocouple in a sheath. In view of Kersten et al or Hecht et al, it would have been obvious to one of ordinary skill in the art to adapt Ushikoshi et al, as modified by Nobori et al, and Bogdanski et al or Abrami et al, with the means to press the heating temperature sensor against the heating surface so that the temperature sensor can make a close contact with the heating surface to more accurately measure the operating temperature.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al as applied to claims 17, 22 and 24-26 above, and further in view of Yoshida et al (US 6,080,970).

Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al show the structure claimed except the heating element having a flat shape.

Yoshida et al shows a heating element having a flat shape. In view of Yoshida et al, it would have been obvious to one of ordinary skill in the art to adapt Ushikoshi et al, as modified

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by Nobori et al, and Bogdanski et al or Abrami et al, with a heating element having a flat shape to further improve the heating distribution by the heating element.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al as applied to claims 17, 22 and 24-26 above, and further in view of Masanao (JP 09-045752).

Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al show the structure claimed except the claimed distance of the bottom of the bottomed hole to the heating surface.

Masanao shows a hot plate with a hole provided on the bottom of the hot plate wherein the bottom of the bottomed hole is arranged near the heating surface that is more than beyond  $\frac{1}{2}$  of the thickness of the hot plate. In view of Masanao, it would have been obvious to one of ordinary skill in the art to Ushikoshi et al, as modified by Nobori et al, and Bogdanski et al or Abrami et al, with the claimed distance so that the temperature sensor that is positioned close to the heating surface can more accurately measurement the heating temperature.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al as applied to claims 17, 22 and 24-26 above, and further in view of Huebscher (US 4,416,553).

Ushikoshi et al in view of Nobori et al, and Bogdanski et al or Abrami et al show the structure claimed except the claimed connection portion that is equal or larger than a strand wire.

Huebscher shows a thermocouple with a strand wire connected thereto. Huebscher further teaches that the connecting wires are preferably to be small or smallest possible. Huebscher teaches that its thermocouple would provide a quick response without much heat loss. In view of

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Huebscher, it would have been obvious to one of ordinary skill in the art to provide the small or smallest possible strand wires including the diameter size .5 mm or less in connection with the thermocouple to increase the sensing response time while minimizing the heating loss.

***Response to Arguments***

9. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Y. Paik  
S. Y. Paik  
Primary Examiner  
Art Unit 3742

syp